

## CHAPTER 10 DIVISION OF DESIGN

### Topic 11 - Organization and Functions

#### Index 11.1 - Organization

The Division of Design (DOD), a part of Project Development is comprised of the following units: Professional Development, CTC Highway Appearances, State Landscape Architecture, Geometric Design Standards, State Highway Drainage Design Storm Water Pollution Control Plan Implementation, State Pavement Design, State Project Development Procedures and Quality Improvement. Finally, the Project Development Coordinators, with the assistance of the Design Reviewers, represent the Chief, DOD, in the Caltrans Districts, maintaining liaison and coordinating District and Headquarters activities.

As the Chief Design Engineer within the DOD, the Chief, Division of Design, is responsible for activities in support of the development of transportation projects as follows: establishes, maintains and monitors the project development process in accord with all applicable State and Federal laws and regulations; establishes engineering standards and procedures for application of standards on a statewide basis; approves exceptions to mandatory design standards; monitors project development related reports and other documents prepared and approved in the Districts for conformance to Caltrans policy and practice. The Chief, DOD also is the ex officio California member of the AASHTO Subcommittee on Design.

#### 11.2 Functions

The major functions of the Division of Design are to:

#### (1) *Project Development.*

- (a) Establish project development process policies and procedures. Provide assistance to the Districts in implementation.
- (b) Develop, publish, and maintain the Project Development Procedures Manual, and the Project Development Workflow Task Manual.
- (c) Develop policies and procedures for project-related community relations. Provide community relations training and technical assistance to Project Development Teams (PDTs) on request. Conduct public opinion research on request.
- (d) Process and/or review:
  - Route Concept Reports.
  - Project Study Reports.
  - Project Reports (Transmittal Reports and Environmental Documents).
  - Combined Project Study Report/Project Report.
  - Project Scope Summary Reports.
  - Noise Barrier Scope Summary Reports.
  - New public road connection submittal for CTC approval.
  - Freeway agreements.
  - Route and project studies submittal to the CTC.

#### (2) *Cooperative Agreements, Encroachments and Resolutions of Necessity.*

- (a) Develop, publish, and maintain the Cooperative Agreement Manual.
- (b) Process and/or review:
  - Cooperative Agreements.
  - Resolution of necessity CTC appearances.
- (c) Approve exceptions to statewide policies and standards governing encroachments

and high/low risk utilities within State highway rights of way.

(3) *Program Review and Evaluation.*

- (a) Monitor statewide route development progress and recommend changes that will improve the effectiveness of the program within the available financial resources.
- (b) Review inventories of State highway needs and proposed additions or deletions to the State Highway System. Provide assistance in the development and review of the State Transportation Improvement Program (STIP) and State Highway Operation and Protection Program (SHOPP).
- (c) Conduct special studies to improve project development and project management control systems.
- (d) Recommend and participate in studies to improve route study techniques and community effects analyses.

(4) *Design Policies and Standards.*

- (a) Develop and adopt design methods, policies, and standards for highway and other transportation facilities.
- (b) Develop, publish and periodically update the Highway Design Manual. Coordinate with other Caltrans programs, Districts, AASHTO, the FHWA, etc. Provide assistance to the Districts in implementation.
- (c) Promote uniformity in the interpretation and application of design standards and design policies.
- (d) Encourage cooperation and communication to successfully integrate environmental considerations and aesthetics into the project development process.
- (e) Coordinate design activities to promote safety-related design features on a statewide basis.

(f) Direct the review of geometric designs by the Districts and review and approve design features containing any deviations from mandatory design standards.

(g) Provide guidelines and develop policies and standards for consideration of non-motorized facilities as an integral part of the total transportation system.

(h) Provide technical expertise to the Districts, Headquarters Programs and Local Agencies regarding implementation of the International System of Units (SI).

(i) Maintain liaison with other Caltrans Programs and Districts, other State agencies, other States, and industry on matters involving transportation facilities.

(j) Develop and disseminate information relative to new and improved methods and procedures for preparing plans and estimating quantities and costs.

(k) Provide guidance and liaison for the development of highway-related facilities of other agencies, such as California agriculture inspection stations, U.S. Border Patrol facilities, etc.

(5) *Drainage and Roadway Structural Design.*

(a) Review and provide guidance on special drainage problems and unusual drainage designs, considering technical and legal aspects based on statewide experience when requested by the Districts.

(b) Provide methods and guidance for pavement design and pavement rehabilitation.

(c) Review and advise Districts on use of mandatory material sites and proprietary items; advise and assist in obtaining FHWA approvals where needed.

(6) *Engineering Management.*

(a) Program advisor for the Facilities Research Program; serves in an advisory capacity to the Research and Development Committee and staff.

- (b) Provide coordination and liaison with District Project Development personnel.
- (c) Through the use of Technical Committees, coordinate the input from all engineering functional areas and industry into the development of geometric, structural roadbed, hydraulics and drainage, and miscellaneous design standards.

(7) *Professional Development.*

- (a) Develop and implement statewide training programs in support of the project development process, including on the job training (OJT), Oversight, and Project Engineer Academies, special task related training (hydraulics, pavement design, traffic analysis and management, etc.), and control systems, etc. Hold Project Engineer workshop meetings. Include consultant staffs as well as Caltrans personnel where needed and desired.

(8) *Value Analysis.*

- (a) Implement and coordinate the use of the structured Value Analysis (VA) process at various milestones throughout the project development procedure.
- (b) Develop guidelines for the statewide application of VA stressing its use in developing alternatives for inclusion in Project Study Reports.
- (c) Review District VA program for compliance with the Project Development Procedures Manual and the Value Analysis Guidelines.

(9) *Resource Conservation.*

- (a) Implement and coordinate the research conservation and recycling program.
- (b) Develop and disseminate information relative to procedures for salvaging, storing, and reusing typical highway items such as asphalt concrete, guardrail hardware, signs, etc.

- (c) Assist the Districts in maintaining an inventory of recycled material for potential use on highway projects.
- (d) Develop innovative uses of recycled materials in special applications such as Mechanically Stabilized Earth (MSE) Retaining Walls, rubberized AC, and sign construction.

(10) *Technology Transfer (T2).*

- (a) Act as liaison to FHWA for the administration of Demonstration, Construction-Evaluated, Experimental Feature and Implementation Projects. This includes the distribution of various reports (primarily research types) from FHWA and other State Highway Agencies.

(11) *Noise Abatement.*

- (a) Act as liaison to developers/vendors of new noise barrier design/products; coordinate Departmental review/approval of their submittals.
- (b) Develop standards, guidelines, practices and procedures relative to the design of noise abatement measures.
- (c) Ensure statewide compliance with current design criteria for noise abatement.
- (d) Maintains liaison with the FHWA, and other Federal, State, and local agencies regarding noise abatement.

(12) *Accessibility Design Standards.*

- (a) Develop standards, guidelines, practices and procedures relative to disabled accessibility.
- (b) Ensure statewide compliance with current design criteria for disabled accessibility.
- (c) Maintain liaison with the FHWA, and other Federal, State, and local agencies regarding disabled accessibility.
- (d) Program Advisor for the HB71 program for compliance with requirements of the Americans With Disabilities Act (ADA).